• COLORADO RIVER •

AQUEDUCT NEWS

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Vol. 1 JULY 5, 1934 No. 12

A STUDY IN SHADOWS

Looking Out of the East Portal of Copper Basin Tunnel No. 2, Across the Canyon and Through Copper Basin No. 1.

· COLORADO RIVER ·
AQUEDUCT NEWS
THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA
LOS ANGELES, CALIFORNIA

Published twice monthly in the interest of Field and Office Workers on the Colorado River Aqueduct, and for the information of all other citizens of the Metropolitan Water District.

Vol. 1 July 5, 1934 No. 12

THE JOB MOVES ON

By the time this issue of the NEWS reaches its readers another milestone in Colorado River Aqueduct construction history will have been passed—the excavation of one-third of the project's ninety-one miles of tunnels.

At the same time comes the announcement that bids will be received this month on construction of Parker Dam, from behind which will be diverted Colorado River water for the thirteen member cities of the Metropolitan Water District.

Congratulations to the workers on the Colorado River Aqueduct and to the people of Southern California!

AN EDITOR'S LAMENT

The editor of the AQUEDUCT NEWS is suffering from a painful sense of guilt.

He feels that it isn't quite fair for him to receive, read, and enjoy, some of the poetic contributions which reach his desk without passing them along to the readers of the magazine. And yet (alas!) he can't pass them on. The limitations of space, unfortunately, transcend all qualms of conscience.

He has come to the conclusion that hard-rock tunneling, somehow, is a powerful stimulant to poetic effort. How else can be explained the reams of verse which is contributed by tunnel men all the way from Whipple Mountain to Valverde?

Some of the aqueduct poets follow stately, dignified meter; some follow the newer school, with variformed lines which sublimely fail to rhyme; some stick to good, old-fashioned doggerel. They range from couplets to cantos—and from Service to Shakespeare.

The readers of THE NEWS don't know what they are missing, and can't know unless at least ten more pages are added to each issue.

So the editor sighs and grieves as he reads the penciled leaves, and hopes to thunder that the folks out yonder won't fill the air with curses because he's held out the verses.

(Help! They've got him doing it, too.)

DROUGHT GRIPPING AMERICA INDICATES FORESIGHT OF AQUEDUCT CONSTRUCTION

Further evidence of the foresight of citizens of the Metropolitan Water District in pressing forward with Colorado River Aqueduct construction is contained in a remarkable scientific article published in the Los Angeles Times Sunday Magazine of July 1, under a Public Ledger Syndicate copyright.

The author is G. K. Spencer, who bases his conclusions upon exhaustive meterological studies and findings of the United States Geological Survey.

The article points out that at the present time a serious drought is gripping wide areas throughout the United States, and is becoming even more acute in this and other normally arid sections.

The studies cited indicate, the author points out, that drought conditions will become increasingly worse during the present century.

"Will the people of this continent have to resort to canal systems to assure a food and water supply?" he asked.

If this question is to be answered in the affirmative, the great new aqueduct of the Metropolitan Water District may well be used as a model for other sections of the United States which are so situated geographically that they never before needed such works.

Because Southern California is normally a semi-arid country and has for many years been confronted with the problem of water—apparently so new elsewhere—it is today actually engaged in answering the question which, according to Mr. Spencer, now faces all America. The answer to Southern California's present water problem is the Colorado River Aqueduct.

Over the drought area as a whole, 1937 will bring the first considerable relief, according to the meteorological theories cited by Mr. Spencer. "Thereafter no really wet season is expected until 1950, when five years of extremely wet weather may follow, and thereafter the century will rapidly build up to what future historians will call the 'Great Drought'."

The article goes on to point out that:

"A. B. Purton, district engineer for the United States Geological Survey, reports that the water in Great Salt Lake, owing to the scanty precipitation, has dropped to the lowest level since 1905.

"State Engineer Hyatt, of California, declares that the shortage of water has already reached, in California, a serious situation.

"In the famous Owens River Valley of California the dryest period in the memory of the oldest Indian is now in effect.

"In Nevada hillsides are covered with dying pinon trees, trees hundreds of years old which have got through ordinary droughts before. Old Indians look in vain for the many small animals that lived in the higher desert country until a few years ago.

"In Nebraska, State-Federal Crop Statistician A. E. Anderson states that Nebraska crops have reached a critical stage because of lack of moisture. And over the Central Plains the reports are the same. Levels of the waters in the Great Lakes are from one to two feet below normal."

Despite these disquieting indications, Mr. Spencer expresses assurance that Man will be able to cope with his dangerous adversary.

"As long as there is any adequate water at all in the great mountain reservoirs, as long as any artesian water remains in the earth, we shall have water," he states.

"There is no danger of all water sources disappearing; that may happen some day, say the scientists, but the date is put ahead some millions of years in the future.

"The necessities of such a period will bring us something different from the age-old transfer of irrigation water in ditches. That will probably be too wasteful, since the water will be sacrificed greatly by evaporation. Indeed, we shall probably go the supposed creatures of the planet Mars, with their alleged canals, one better, in that we may use huge aqueducts to carry the water from mighty dams for hundreds of miles.

"Without modern science, it is doubtless true that a whole civilization would face direct peril. Yet, this time, the century between 1934 and 2034 will be surmounted without a migration and without tragedy other than that which may overtake occasion as one-crop farmers. The Federal government will see to that, and it has the necessary scientific expedients."

BIDS ON PARKER DAM CONSTRUCTION TO BE RECEIVED ON JULY 26; START OF WORK THIS SUMMER INDICATED

Indicating that construction of the Parker Dam unit of the Colorado River Aqueduct will be launched this summer, specifications covering the building of the aqueduct's diversion dam were received last week by officials of the Metropolitan Water District.

Bids on construction of the dam, which will be located approximately 150 miles downstream from Boulder Dam, will be received at the Los Angeles office of the United States Bureau of Reclamation, 608 Grant Building, until 10 a. m., July 26, it was revealed in the specifications.

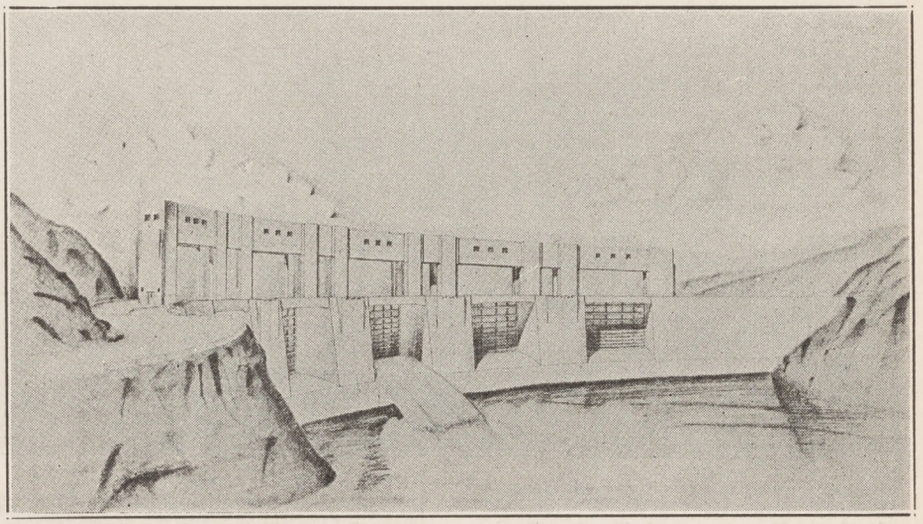
The new dam, from behind which the Metropolitan Water District will divert its share of the flow of the Colorado River, is to be constructed by the Reclamation Bureau under terms of a contract between the Water District and the Federal agency. The District will furnish funds to finance the project, the estimated cost of which is approximately $13,000,000.

Parker Dam, it is revealed by the specifications, will be of concrete arch design, 800 feet long across its crest and 340 feet high from bedrock. Its maximum thickness will be 100 feet. An eighteen-foot roadway will be built across its crest. A feature of the structure will be five huge Stoney gates, fifty feet by fifty feet, mounted on the crest to permit the passage of flood waters.

The reservoir to be formed by the new dam will be approximately fifty miles long, extending upstream almost as far as the city of Needles on the California bank of the river. The reservoir capacity will be 717,000 acre feet. The water level of the river will be raised eighty feet by the dam.

Construction of Parker Dam is being launched now, rather than at a later date, in order to take advantage of the low flow of the river which will result from the filling of Boulder Dam reservoir.

The comparatively small quantity of water which will pass down the river during this period will make possible a material saving in the cost of diversion works at Parker. With surplus waters being caught and held by Boulder Dam, it will be necessary to drive only two diversion tunnels to carry the river around the Parker dam site while construction is under way. These bores, 29 feet in diameter, will be approximately 1,600 feet long, in comparison to the four fifty-foot diversion tunnels which it was necessary to construct at Boulder.



Official Bureau of Reclamation drawing of Parker Dam as it will appear when completed.

Preparation for the calling of bids on the dam follows extensive conferences on final plans and specifications held between officials of the Reclamation Bureau and engineers of the Metropolitan Water District, led by General Manager and Chief Engineer F. E. Weymouth of the District and J. L. Savage, chief designing engineer of the Bureau. Designs for the structure have been prepared in the Denver office of the Reclamation Bureau and submitted to District engineers for approval.

Specifications reveal that there will be 260,000 cubic yards of concrete in the dam and 15,000 cubic yards of concrete in the spillway bridge piers, gate guides, and stairway shaft; 1,150 cubic yards in the operating house, and 870 cubic yards in the curbs, parapets and roadway bridges.

A system of cooling pipes will be embedded in the concrete of the dam, through which river water will be circulated for the purpose of cooling the concrete prior to the grouting of contraction joints. In order to obtain river water at a temperature low enough to be effective without resorting to refrigeration, the cooling must be done during the months of December, January, and February. The mean temperature of the concrete will be reduced to 54 degrees Fahrenheit or less.

Metal tubing, one inch outside diameter, with expansion type couplings, is contemplated for the cooling system and the installation of about 230,000 linear feet of tubing, involving about 16,000 couplings will be required.

Excavation for the diversion dam and coffer dams will approximate 1,508,000 cubic yards common and 83,000 cubic yards of rock. The main excavation for the dam in earth will be made with 2:1 slopes. Rock excavated for the foundation will be placed as a blanket on the slopes of the common excavation to stabilize the lower part of the slopes. Stripping of the overburden from the sand and gravel deposits to be used for concrete aggregates will require about 150,000 cubic yards of excavation.

A tract on the California side of the river about a half-mile below the dam site has been set aside by the Government for the contractor's camp. Plans for the camp will be subject to approval by the contracting officer, specific provisions being made for water supply, sanitation, and fire protection.

Construction of a permanent road on the California side of the river about 1800 feet in length, extending from a connection with the existing aqueduct highway to the crest of the dam, and a spur to the power house side, is included in Schedule No. 1.

Interior Contractors' General Hospital. (Below) Mrs. E. C. Warmbrodt, Miss Elizabeth Runyan, and Charles Gayette.

Medical Service of Contractors Is Extended

Further expansion of medical and hospital facilities for employees of the Metropolitan Water District was revealed last week with the announcement that arrangements have been made to treat District personnel at the Contractors' General Hospital in cases of emergency.

This arrangement, it is pointed out, is of particular importance to employees stationed in Divisions 1, 2, and 3 and at a considerable distance from the District's hospital at Berdoo Camp in the Coachella Division. Only cases which are impracticable to send to Berdoo will be treated at the Contractors' hospital.

The Contractors' General Hospital is located at the West portal of West Eagle Mountain tunnel. It is operated by Drs. S. R. Garfield and B. G. Morris. Dr. Rudolph Patton is associate physician; Charles Gayette, Miss Elizabeth Runyon, and Mrs. E. C. Warmbrodt, are nurses.

The location of the establishment, adjacent to Bent & Dixon's camp, makes it easily accessible to the contractors between the District's force account jobs and East Iron Mountain tunnel.

The hospital is equipped to handle all types of treatment. Its facilities include X-ray equipment, an ambulance, sterilization apparatus, operating room, ward, private room, and dressing room.

New State Highway Planned Near Aqueduct

Aqueduct workers on the western end of the line will be interested in the announcement of State Highway Commissioner Frank A. Tetley to the effect that work is to be launched within a short time on the new Riverside-Beaumont highway, and that the job should be completed within six months. The new road will be routed directly west from Beaumont for some distance, thence southwesterly to Riverside. It will not tie into the present Jackrabbit Trail.

Safety On the Aqueduct

A startling and critical problem is indicated by the fact that, in the United States, motor vehicle accidents take an annual toll of over 27,000 human lives; they are the cause of more than 900,000 non-fatal personal injuries of varying severity, and entail a property loss of almost a billion dollars. This problem challenges the nation. Movements such as better regulations, firmer enforcements, better highways, better machines, safety education and other features are under way to assist in meeting this challenge, but they can only help the individual driver avoid accidents. The reckless, foolish, or drunk driver can still kill or injure himself and others, even though all of these conditions are ideal.

On our local highways, accidental deaths and injuries are by no means uncommon, and a few of these occurrences have involved persons connected with the construction of the aqueduct.

Can we not learn a lesson from the sad experiences of others even though good fortune, rather than caution, has, perhaps, prevented some injuries. Check yourself daily on the following points:

Nervousness.
Excessive speed.
Not cautious approaching intersections.
Takes curves too fast.
Takes curves on wrong side of road.
Does not descend hills in gear.
Passes overtaken cars near crown of hill.
Does not handle gears properly.
Does not keep to right side of center line.
Does not slow down passing schools.
Passes overtaken cars without caution.
Follows other car too closely.
Turns head while driving.
Conduct at railroad crossings.
Talks too much.

If your conduct is favorable in these particulars, you will be fairly safe, for they certainly take into consideration most of the traffic sins.

In the main, the only way in which the condition can be greatly improved is for each user of the streets and highways to assume a full personal responsibility for his own safety and the safety of others. If every person would do his full part toward safety on the highways, the toll in life and limb would decrease at a rapid rate.

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Division 1.....R. C. Booth
Divisions 2 and 3.....John Stearns
Division 4.....R. B. Diemer
Divisions 5 and 6.....B. C. Leadbetter

SUPERINTENDENTS

Colorado River, Copper Basin and Whipple Mt. Tunnels, Walsh Construction Co., F. T. Huntington, Gen. Supt.; W. A. Huntington and E. A. Hatch, Tunnel Supts.

Coxcomb Tunnel and Iron Mt. shaft, Winston Bros., E. A. Bernard, Gen. Supt.; F. T. Hillman and R. B. Johnson, Tunnel Supts.

Iron Mt. Tunnel, West Portal, Utah Constr. Co., Ben Arp, Gen. Supt.

East Eagle Mt. Tunnel and West Eagle Mt. Tunnel, east portion, Broderick & Gordon, F. E. Stokes, Gen. Supt.

West Eagle Mt. Tunnel, west portion L. E. Dixon and Bent Bros., P. C. Guinn, Gen. Supt.

Hayfield Tunnel No. 1, Hunkin & Conkey Constr. Co., G. B. Hoag, Gen. Supt.; F. Backlund, Tunnel Supt.

Hayfield Tunnel No. 2, Shofner & Gordon, H. E. Warden, Gen. Supt.

Cottonwood Tunnel, J. F. Shea Co., Inc., Gilbert Shea, Gen. Mgr.; Joe Bonner and Carl Nelson, Tunnel Supts.

Mecca Pass Tunnels, Morrison-Knudsen, S. A. Dahlberg, Gen. Supt.; C. A. Griffen, Asst. Supt.

Coachella Division, R. M. Merriman, Division Supt.

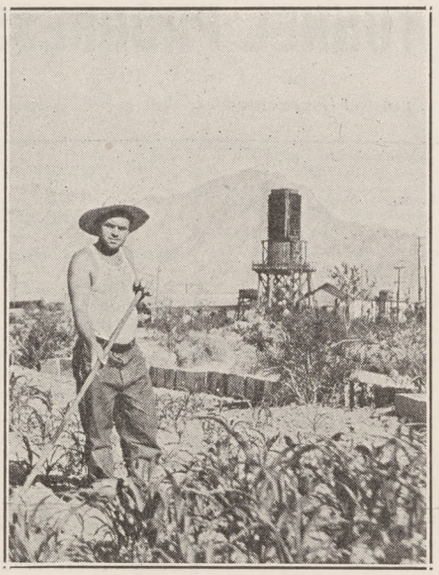
Yellow Canyon Adit, E. Coachella Tunnel—
District Force Account.....W. L. Taylor
Fargo Adit, East Coachella Tunnel—
District Force Account.....J. H. Manwaring
Berdoo Adit, East Coachella Tunnel—
District Force Account.....F. A. Weller
Pushawalla Adit, East Coachella Tunnel—
District Force Account....C. J. Kavanagh
Thousand Palms—
District Force Account.....D. L. Reaburn
Wide Canyon—
District Force Account.....John Jackman
Long Canyon—
District Force Account....E. E. McCabe,
Little Morongo—
District Force Account.....R. L. Bryant,

Whitewater Tunnels, West Constr. Co., H. E. Carleton, Gen. Supt.; Angus MacDonnell, Tunnel Supt.

San Jacinto Tunnel, Wenzel & Henoch, Walter Heenecke, Gen. Supt.; W. A. Boyd, Walter Baer, and Jack May, Tunnel Supts.

Bernasconi Tunnel, Hamilton & Gleason Co., H. J. King, Gen. Supt.

Valverde Tunnel, Dravo Contr. Co., R. W. Remp, Gen. Supt.; H. C. Richarson, Asst. Gen. Supt.; Dean Luther, J. R. Glaeser, Jack Stone, and Fred Youmans, Tunnel Supts.



**The Man With the Hoe—
Mr. William (Kingfish) Billings.**

Big Beans, Colossal Corn Flourish at W. Iron Mt.

Investigators of the United States Department of Agriculture are reported to be checking up on the rumor that the crop control is being seriously menaced at West Iron Mountain camp on the line of the Colorado River Aqueduct.

Rumor has it that one William (Kingfish) Billings, a member of the Utah Construction Company forces, is well on the way to breaking the market for corn, beans, cabbage, and other staple farm products.

It is understood, also, that the Stanhope, Iowa, Chamber of Commerce has threatened to take action against Mr. Billings, who attributes this attitude to professional jealousy. He points out that the verdant growth at West Iron is making hash of the famed Iowa song hailing the place where the tall corn grows.

Mr. Billings revealed to a correspondent of THE NEWS last week that he has plans—big plans. By tender and loving care, he expects to grow corn stalks large enough to be used as tunnel timbers in case of a shortage of wood.

The desert's leading gentleman farmer also has high hopes for his bean crop. "Since I was a boy," he says, "I have been hearing about a fellow named Jack who had a beanstalk. In fact, I have heard so much about him and his beanstalk that I'm getting tired of it. When I get through here they'll have to revise that story."

Employees' Election Results Are Tallied

Announcement was made last week of the results of the first Metropolitan Water District employees' election to be held under the recently revised Employees' Association constitution.

The following were elected members of the Governing Board for Banning headquarters and Main Aqueduct engineering forces:

Banning Headquarters

George M. Fox—
Term ending June, 1936.
Harry C. Morgan—
Term ending June, 1935.

Division No. 1

H. H. Cutler—
Term ending June, 1936.
Geo. L. Nelson—
Term ending June, 1935.

Divisions Nos. 2 & 3

Kenneth Simpson—
Term ending June, 1936.
D. C. Walker—
Term ending June, 1935.

Division No. 4

Lyle H. Henderson—
Term ending June, 1936.
V. P. Pentegoff—
Term ending June, 1935.

Division No. 5

Hugh Parker—
Term ending June, 1936.
W. E. Smith—
Term ending June, 1935.

Division No. 6

Harold E. Varney—
Term ending June, 1936.
Don R. S. DeWitt—
Term ending June, 1935.

The following were elected members of the Governing Board for Los Angeles offices and Distribution System engineering forces:

Accounting, Controller, Disbursing, Personnel, and Right-of-Way

C. W. Kudell—
Term ending June, 1936.

Design, Distribution, and Electrical and Mechanical

Harris V. Crawshaw—
Term ending June, 1936.

Chief Engineer, Construction, Legal, Executive, and Purchasing

David S. Koontz—
Term ending June, 1936.
Helen A. Grous—
Term ending June, 1935.

Miscellaneous Activities, Labor Employment, Examining, Garage

Robert D. Speers—
Term ending June, 1936.
Roy H. Scrivner—
Term ending June, 1935.

BEST PROGRESS
This Period
Rock Tunnels - Copper Basin No. 2, 807 ft.
Gravel Tunnels - Whitewater No. 2, 846 ft.

TUNNEL PROGRESS

June 1 to 30, 1934
Tunnel Excavated to Date, 30.52 Miles

BEST WEEK'S PROGRESS
This Year
Rock Tunnels - Copper Basin No. 2, 237 ft.
Gravel Tunnels - Whitewater No. 2, 233 ft.

TUNNELS ON CONTRACT	Length in feet	Number of Shifts	EXCAVATION PROGRESS IN FEET: Average Per Shift	This Period	Total to date
Walsh Constr. Co.					
COLORADO RIVER	(5514)				
West Portal	5514	69	6.8	468	468
COPPER BASIN, No. 1	(752)				
West Portal	752	12	6.3	76	752
COPPER BASIN, No. 2	(11,580)				
East from adit	1878			0	1878
Adit	330			0	330
West from adit	9702	90	9.0	807	4307
WHIPPLE MT.	(32,265)				
East from adit	18,352	90	7.5	677	4133
Adit	924			0	924
West from adit	13,913	90	6.8	608	3492
Winston Bros.					
IRON MT.	(39,759)				
East from shaft	9844	78	5.0	388	1794
Shaft	165			0	165
West from shaft	13,743	78	7.0	543	4282
Utah Constr. Co.					
IRON MT.					
West Portal	16,172	90	7.0	629	7099
Winston Bros.					
COXCOMB	(17,795)				
East Portal	8765	78	8.4	652	5314
West Portal	9030			0	0
Broderick & Gordon					
EAST EAGLE MT.	(9,442)				
West Portal	9442	75	1.6	122	122
WEST EAGLE MT.	(26,494)				
East from adit	7871	90	4.7	426	1774
Adit	2008			0	2008
West from adit	7974	90	2.1	193	1066
Dixon & Bent					
WEST EAGLE MT.					
West Portal	10,649	90	7.2	650	5138
Hunkin & Conkey					
HAYFIELD, No. 1	(9677)				
East from adit	5317	65	4.9	318	1682
Adit	511			0	511
West from adit	4360	65	5.0	328	1352
Shofner & Gordon					
HAYFIELD, No. 2	(5375)				
West Portal	5375	52	6.5	336	2564

TUNNELS ON CONTRACT	Length in feet	Number of Shifts	EXCAVATION PROGRESS IN FEET: Average Per Shift	This Period	Total to date
J. F. Shea Co.					
COTTONWOOD	(20,105)				
East Portal	10,114	84	8.1	682	6179
West Portal	9991	78	8.5	660	5849
Morrison-Knudsen					
MECCA PASS	(5,940)				
No. 1, West Portal	338			0	338
No. 2, West Portal	997	67	4.1	274	296
No. 3, East Portal	4605	51	10.9	556	4605
West Constr. Co.					
WHITEWATER	(10,206)				
No. 1, West Portal	2060	0	0	0	35
No. 2, East Portal	8146	78	10.8	846	6529
Wenzel & Henoch					
SAN JACINTO	(67,415)				
East from Cabazon	8553	90	1.3	116	670
Cabazon shaft	246			0	246
Cross drift	935			0	935
West from Cabazon	22,839	90	8.5	767	2388
East from Potrero	20,589	63	1.2	77	160
Potrero shaft	796			0	796
West from Potrero	6712	84	1.6	137	223
West Portal	8722	90	3.5	314	1843
Hamilton & Gleason					
BERNASCONI	(6220)				
East Portal	6220	55	6.1	336	3718
Dravo Contr. Co.					
VALVERDE	(38,765)				
East from Shaft 1	2140	41	3.8	155	1607
Shaft 1	64			0	64
West from Shaft 1	1525	84	3.0	255	1068
East from Shaft 2	5400	84	4.9	412	3696
Shaft 2	204			0	204
West from Shaft 2	5400	84	3.3	281	3550
East from Shaft 3	6950	0	0	0	2450
Shaft 3	192			0	192
West from Shaft 3	6950	84	5.7	480	3482
East from Adit	5117			0	0
Adit	406	56	2.5	139	177
West from Adit	5283			0	0
Total Excav. Contract Tunnels exclusive of Adits and Shafts (In Miles)	307,304 58.20	2409	5.63	13,569 2.57	95,903 18.16

TUNNELS ON FORCE ACCOUNT

	Sched.					
EAST COACHELLA TUNNEL		(96,610)				
Yellow Canyon Adit		686			0	686
East from adit	1	10,204	78	7.2	562	5908
West from adit	1	10,076	78	8.3	651	5677
Fargo Canyon Adit		891			0	891
East from adit	2	11,850	78	7.4	578	5113
West from adit	2	15,200	78	4.6	362	4627
Berdoo Canyon Adit		2042			0	2042
East from adit	3	15,824	78	8.3	646	6108
West from adit	3	12,456	78	9.5	739	5896
Pushawalla Canyon Adit		2935			0	2935
East from adit	4	10,186	78	7.4	574	3514
West from adit	4	10,814	78	6.6	514	3827
WEST COACHELLA TUNNELS		(81,109)				
THOUSAND PALMS						
No. 1, West Portal	5	16,058	78	5.6	439	5344
No. 2, Tunnel	5	3838			0	3838

	Sched.					
WIDE CANYON						
No. 1, E. Portal	5	5122	78	5.5	427	1573
No. 1, W. Portal	6	9183	78	6.4	500	5103
No. 2 Tunnel	6	848			0	848
SEVEN PALMS		(16,730)				
E. Portal	6	8390	78	5.7	443	4371
W. Portal	7	8340	78	7.0	548	984
LONG CANYON		(15,240)				
E. Portal	7	8360	78	7.4	576	1056
W. Portal	8	6880				0
BLIND CANYON		(6,788)				
E. Portal	8	—				0
W. Portal	8	6788	78	6.4	496	852
MORONGO No. 1		(5,512)				
E. Portal	8	5512	78	5.7	441	610
W. Portal	8	—				0
MORONGO No. 2		(1790)				
E. Portal	8	1790				0
W. Portal	8	—				0
Total excav. Force Acct. Tunnels excl. of Adits and Shafts (In Miles)		177,719 33.66	1248	6.81	8496 1.61	65,249 12.36
Total Tunnel Excavation (Miles)		91.86		6.03 ft.	4.18	30.52

Heading excavation is counted as two-thirds of full tunnel excavation.

NEWS FROM FIELD AND OFFICE

Of interest to the District employees, both in Los Angeles and in the field, is the marriage of Miss Annabelle C. Joseph, daughter of Mr. Saul A. Joseph, purchasing agent, to V. J. (Jerry) Collore. The wedding was held at the Wilshire Crest Presbyterian Church on June 17th. A honeymoon of several days was spent at Yosemite. Mr. Collore is with the District in Indio where the happy couple will make their home.

* * *

An interested visitor along the aqueduct line last week was H. Nishioka, construction engineer for the Japanese Government.

* * *

C. J. Kavanagh, construction superintendent at Pushawalla Canyon camp on the Coachella Division, resigned on June 16 to accept a similar position with Broderick & Gordon, contractors on the Eagle Mountain tunnels of the aqueduct, it was learned last week. Mr. Kavanagh succeeds F. E. Stokes, who is ill. At Pushawalla, Kenneth MacIsaacs takes over the position of superintendent.

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An adition to the electrical forces at Little Morongo was announced by Tunnel Electrician G. W. Wilson on his return from a hurried trip to Long Beach recently. The eight pound boy has been named Donald Worster and the cigars were mighty good.

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Not that any significance should be attached to the coincidence, but the day after Geo. E. Baker and C. P. "Bud" Weaver attended the Shrine Durbar in Los Angeles, and were together inspecting the new water supply in Mission canyon, they reported seeing a mountain lion "bigger than Covington's dog". Mountain lions are a rare sight so far down on the desert. The same day they discovered a coyote den with several pups. The coyote story is accepted.

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The East heading of Coxcomb tunnel, crossed the mile mark on the swing shift June 29, 1934.

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Keen interest in Colorado River Aqueduct construction was evinced recently by delegates to the National Highway Sixty Association held at Riverside. The visitors, coming from points as far east as West Virginia, were impresed particularly by the aqueduct highway system.

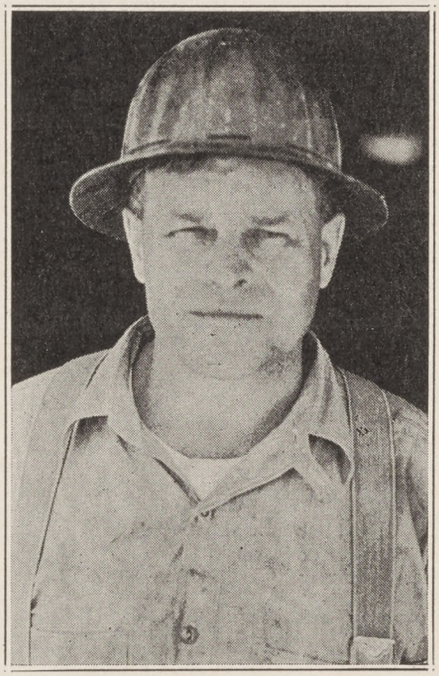
AQUEDUCT TEMPERATURES
June 9 to June 23, inclusive

	Max.	Min.
Div. 1	105	70
Div. 2 and 3	105	63
Div. 4	99	63
Div. 5 and 6	95	44

Appointment of a committee of five prominent citizens to promote a huge California exposition in 1938-39 was made last week by Chairman John R. Quinn, of the Los Angeles County Board of Supervisors. The exposition is planned to celebrate the completion of the Colorado River Aqueduct and Boulder Dam.

* * *

The Big Morongo water line has all been placed, and is delivering water to the spreading grounds above the Big Morongo pump house. The line is carrying all of the water developed at Covington Springs at the present time. It will augment the water supply of the Coachella Division camps.



This, ladies and gentlemen, is none other than Ben Arp, general superintendent on the west portion of Iron Mountain tunnel for the Utah Construction Company. Mr. Arp is known up and down the aqueduct line as the human mole because of the amount of time he spends in the tunnel. It is rumored that he hasn't seen daylight since the job began.

The Utah Construction Company, working from the west portal of Iron Mountain tunnel, passed the 7,000-foot mark on the graveyard shift on June 25, making this tunnel the first single heading on the aqueduct to cross the 4,000, 5,000, 6,000, and 7,000 foot marks.

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The final game of the five-game series of baseball between Winston Brothers camps at East Iron and Coxcomb was won by the latter last week. Believe it or not, the score was 34 to 3.

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The matter of the Employees' Annual Picnic was taken under consideration at the first meeting of the Governing Board of the Los Angeles Office and Distribution System last week. Although no final action was taken, it was suggested that the Los Angeles office and the Field Forces plan the picnic on alternate years, because of the difficulty in making arrangements owing to the distance between the two groups. August 19 was discussed as the probable date for the affair this year.

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Secretary Geyne Schenk of the Governing Board of the Los Angeles office has announced that arrangements have been made whereby employees of the District may avail themselves of membership in the Ross Loos Clinic. Circulars and application cards may be obtained from Miss Schenk.

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Eric F. Bladholm, of the Electrical Division, deserted the bachelor ranks last week. The bride was Miss Virginia Rogers of Westwood Village.

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George Von KleinSmid resigned his position with the engineering forces on Divisions 5 & 6 last week to accept a post with Los Angeles County.

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Aqueduct workers stationed east of Banning report with relief that the elimination of highway dips between Cabazon and Whitewater has been virtually completed. In addition to the installation of numerous culverts, three bridges were built to iron out the dangerous declevities in the road.

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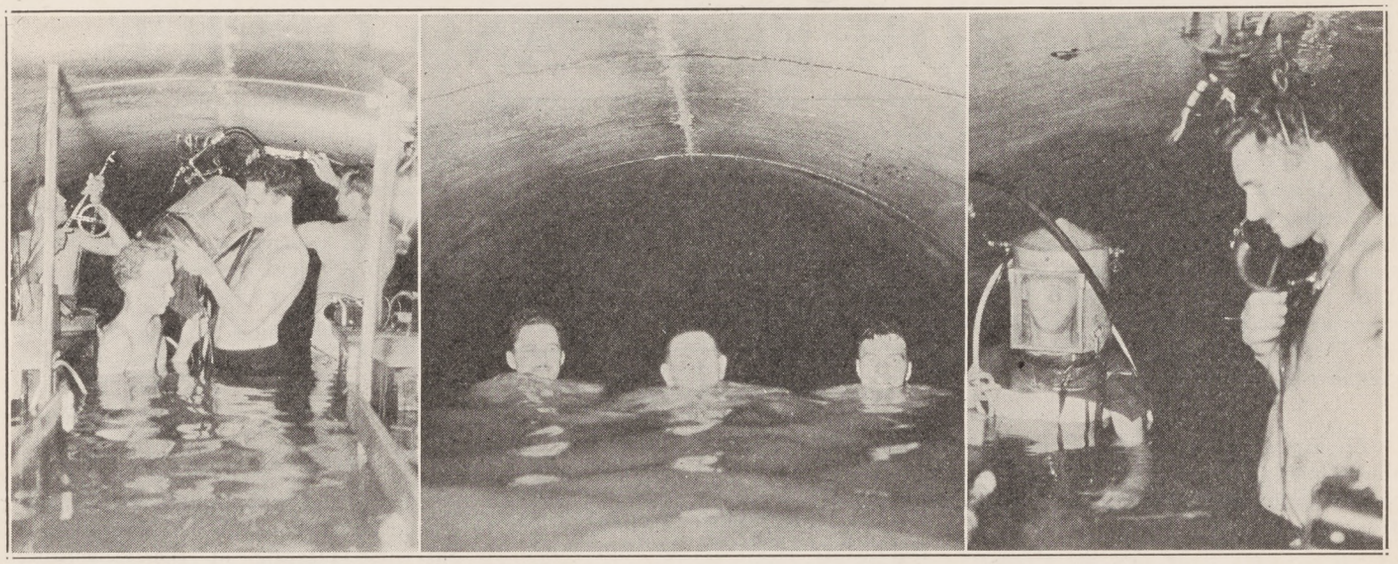
Olaf Laurgaard, the U. S. Reclamation Bureau's construction engineer on Parker Dam, and a party of five men arrived at Division No. 1 headquarters on June 22.



Making underwater strain tests on the newly completed Fan Hill conduit section.

TUNNEL WORKERS CELEBRATE JULY 4TH FOR DUAL REASON

Tunnel crews on the Colorado River Aqueduct had a two-fold reason for celebrating Independence Day this year, with progress reports indicating that more than one-third of the 91.86 miles of aqueduct tunnels would be excavated by July 4.

This prediction was made following receipt of reports from tunnel construction camps showing the establishment of an all-time monthly excavation record between June 7 and June 30. As is shown in this issue of THE NEWS, 4.18 miles of bore was excavated during that period, bringing the total up to 30.52 miles.

This total mileage, it was pointed out, left only a fraction of a mile of bore to be driven before the one-third mark would be reached. On the basis of the June 1-June 30 record, this distance is practically certain of achievement.

Heralding the approach of the one-third mark, an important milestone in aqueduct construction, newspapers throughout Southern California last week summed up the magnitude of the project and the progress which has been made to date.

It was pointed out that the 29 separate tunnels of the project, all 16 feet in diameter, constitute the greatest tunnel driving program in the history of engineering, and the work as a whole is substantially ahead of schedule and under the original cost estimates.

Attention was drawn to the fact that the longest of the aqueduct's bores is the East Coachella tunnel, in the Little San Bernardino Mountains, measuring 18 miles from end to end. Second longest is the 13-mile bore which will pierce a flank of San Jacinto Mountain, one of Southern California's highest peaks.

That tunnel driving is not the only phase of aqueduct construction was shown, however, by the announcement that work has been practically completed on the Fan Hill siphon of the aqueduct, and that construction on the Little Morongo siphon is going forward rapidly.

These two structures, one monolithic and the other precast, are being built, it was pointed out, as part of an experiment to determine the type of siphon construction best suited to the aqueduct project.

BOWL TICKETS

Special group tickets for the Hollywood Bowl concerts will be available to aqueduct employees at a saving of 25 cents each, it was announced last week. The tickets may be obtained from H. G. Hawley in Room 1007 of the Los Angeles headquarters building. The prices for Thursday and Friday will be 50 cents, and for the Tuesday and Saturday concerts 25 cents. Tuesday of each week has been designed as symphony night, Thursday solo night, Friday novelty night, and Saturday popular night.

District Engineers Dive Deep In Desert

Deep sea diving in the heart of the desert!

That was the novel experience last week of a group of Metropolitan Water District engineers engaged in making strain tests of the newly completed conduit section at Fan Hill.

The tests were matters of interest, also, because they marked the first time water has flowed through any part of the greatest water carrier ever built.

The standard cut and cover conduit section, 16 feet in diameter, was filled to normal flow depth of 13 feet, and underwater tests were made with the aid of an extensometer, a device consisting of a length of invar tape, on the end of which is a dial gauge graduated to thousandths of an inch, and a spring balance to measure tension on the tape.

This instrument was used to measure the conduit diameter in various directions, the diameters under water load being compared with those under other conditions.

The underwater measurements were made with the aid of a diver's helmet, constructed in the District's shops by Vernon Sheffield, of the District organization, who formerly was a professional diver.

Carl Heilbron is in charge of the testing. Working with him are William Saylor, Walter Ayers, David Ericson, and Edward Zielbauer.

The water tests were completed last week, but other types of tests are still going forward.